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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/030,723 | 07/11/2002 | James Scott Tyler | NOR-933A | 8221 |
| 37172 | 7590 | 08/10/2004 | EXAMINER | |
| WOOD, HERRON & EVANS, LLP (NORDSON) 2700 CAREW TOWER 441 VINE STREET CINCINNATI, OH 45202 | | | KACKAR, RAM N | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1763 | |

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/030,723

Applicant(s)

TYLER, JAMES SCOTT

Examiner

Ram N Kackar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-19,44 and 45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-19 and 44 is/are rejected.
- 7) ☒ Claim(s) 45 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-19 in the reply filed on 6/17/2004 is acknowledged.

Claim Rejections - 35 USC § 102

- 2 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

- 3 Claims 11-13 and 18-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Arami et al (US6035804).

Arami et al disclose a vacuum chamber with a base (Fig 4-4), an access member (12), which can be opened or closed (Fig 3 and 4), work piece holding portion (24), sealing member (7), gas supply and apertures for gas distribution (Fig 8-104), electrode assembly (24 and 9) plasma excitation source, vacuum source (Col 9 lines 1-10) and a hinge coupling (12).

Claim Rejections - 35 USC § 103

- 4 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5 Claims 1-2, 5 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekine et al (US 5660744) in view of Koshiishi et al (US 5919332).

Sekine et al disclose a vacuum chamber with a vacuum pump and a vacuum baffle (Fig 1 or Fig 6 and Col 19 lines 13-29 and Col 21 lines 55-60), gas supply (4), work piece holding portion (2), plasma excitation source (5), a powered electrode between vacuum baffle and work piece holding portion (2) and a ground electrode positioned on an opposite side (7).

Sekine et al do not disclose a vacuum baffle, which comprises an electrically insulating material.

Koshiishi et al disclose a vacuum baffle, which comprises insulating material (Col 16 lines 36-40).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have the baffle plate insulated to confine plasma towards the processing area.

6 Claims 1-2 and 5 are rejected under 35 U.S.C. 102(b) as being unpatentable over Matsuda et al (JP 03002377) in view of Koshiishi et al (US 5919332).

Matsuda et al disclose a vacuum chamber with a vacuum pump and a vacuum baffle (Fig 2-16), gas supply (8 and 9), work piece holding portion (5), plasma excitation source (12), a powered electrode between vacuum baffle and work piece holding portion (13) and a ground electrode positioned on an opposite side (Fig 2).

Matsuda et al do not disclose a vacuum baffle, which comprises an electrically insulating material.

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Koshiishi et al disclose a vacuum baffle, which comprises insulating material (Col 16 lines 36-40).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have the baffle plate insulated to confine plasma towards the processing area.

7 Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sekine et al (US 5660744) Sekine et al (US 5660744) in view of Koshiishi et al (US 5919332) as applied to claims 1-2 and 5 and further in view of Moore et al (US 5710407).

Sekine et al disclose a plasma vacuum chamber for processing of work pieces.

Sekine et al do not disclose an adjustable mechanism for varying width work pieces.

Moore et al disclose processing work pieces of varying sizes on single susceptor (Abstract).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to use susceptor adjustable for varying size of substrate according to the teaching of Moore.

8 Claims 4, 6-7, 9-10, 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekine et al (US 5660744) in view of Koshiishi et al (US 5919332) as applied to claims 1-2 and 5 and further in view of Arami et al (US 6035804).

Sekine et al disclose a vacuum chamber with a vacuum pump and a vacuum baffle (Fig 1 or Fig 6 and Col 19 lines 13-29 and Col 21 lines 55-60), gas supply (4), work piece holding portion (2), plasma excitation source (5), a powered electrode between vacuum baffle and work piece holding portion (2), a ground electrode positioned on an opposite side (7) and a lid (7).

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Sekine et al do not disclose a hinge for opening or closing the lid. However, a hinge to allow a lid to open/close is conventional and common.

Arami et al disclose a plasma chamber with a base (Fig 4-4), lid (12) and a hinge coupling (12).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to use a hinge to conveniently open and close the lid.

Allowable Subject Matter

Claim 45 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 45 is allowable because the prior art does not fairly disclose or suggest an electrical feed through extending through the vacuum distribution baffle.

Response to Amendment

Applicant's arguments filed 6/28/2004 have been fully considered but they are not persuasive.

Applicant argues that Sekine cannot and does not disclose the claimed vacuum distribution baffle.

This is not correct since Sekine clearly says that the gas is evacuated by a vacuum pump through a baffle (Col 21 lines 55-58) and thus fixes the position of the baffle next to the vacuum port.

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Applicant argues that Arami does not disclose that the arm is mounted using a hinge coupling having an obround bearing groove.

Applicant has used a term obround bearing groove which indicates that it facilitates the lid closing vertically so as to compress the seal vertically.

Since the lid closes vertically on part (Fig 2-3 and Col 3 lines 15-20) in Arami the hinge functions as claimed and therefore reads on the claim properly.

Applicant asserts that Moore does not disclose adjustable width of work piece holding portion.

This is not correct since Moore clearly says (Abstract) that multiplicity of wafers could be used on a single large wafer and shows them supported in pockets. Moore thus provides work piece holding portions, which could be adjusted for the width of the substrate.

Applicant asserts that powered electrode and ground electrode are not equidistant.

This limitation pertains to adjustment of apparatus parameters to make it work optimally for the intended process. This type of optimization is expected of a person of ordinary skill in the art and has been held obvious.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 571 272 1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RK


SUPERVISOR, EXAMINER
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